

# Linux\* Tips for NetWare Administrators

**Novell®**  
**NetWare®**

**6.5 SP8**

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Novell, Inc.  
404 Wyman Street, Suite 500  
Waltham, MA 02451  
U.S.A.  
[www.novell.com](http://www.novell.com)

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# About This Guide

We plan to expand the information in this guide over time. However, it will never become a substitute for the formal, intensive training that is required to become an efficient and successful Linux administrator.

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**IMPORTANT:** This book contains information for NetWare® 6.5 SP8 and Novell Open Enterprise Server 2 SP1 Linux. For the latest information about tips for Linux, see the Novell Open Enterprise Server 2 SP2 Linux or later versions of the *OES2 SP2: Linux Tips for NetWare Administrators*.

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## Audience

This guide is designed to help network administrators understand some of the similarities and differences between NetWare and Linux, and to begin working with OES-Linux

## Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with OES. To contact us, use the User Comments feature at the bottom of any page in the online documentation.

## Documentation Updates

For the latest version of this guide, refer to the [OES 2 SP2 Documentation Web site \(http://www.novell.com/documentation/oes2\)](http://www.novell.com/documentation/oes2).

## Documentation Conventions

In this documentation, a greater-than symbol (>) is used to separate actions within a step and items within a cross-reference path.

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When a single pathname can be written with a backslash for some platforms, or a forward slash for other platforms, the pathname is presented with a forward slash to reflect the Linux convention. Users of platforms that require a backslash, such as NetWare, should use backslashes as required by the software.





# What's New

# 1

This guide has been updated for the OES 2 product release with a number of new command entries in the “[NetWare/Linux Command Map](#)” on page 11 and a new chapter, “[Other Tips](#)” on page 49.



# NetWare/Linux Command Map

# 2

NetWare® administrators who are deploying OES-Linux are interested in finding Linux counterparts for their favorite NetWare commands.

**Table 2-1** lists mappings between many of the common NetWare commands and their Linux counterparts with the following limitations:

- Neither the list of NetWare commands nor the list of Linux counterparts is comprehensive. If you require more detailed information, you might consider purchasing a command reference from an industry publisher.
- NetWare and Linux are completely different operating systems. Some NetWare commands don't have a Linux counterpart. Where counterparts don't exist, we have attempted to provide explanations to help you. Ultimately, however, this section is only a tool to help you get started. It is not a substitute for the hands-on Linux training that all Linux administrators need.
- The NetWare and Linux commands listed are only available when the NLM™ (NetWare) or RPM (Linux) associated with the command is installed on the server where the command is attempted. For some listed commands, the associated NLM programs and RPMs are not installed by default.

For some NetWare commands, the Linux alternative is provided by functionality in either iManager or Novell® Remote Manager (NRM). For information on Novell management utilities, see “**OES Utilities and Tools**” in the *NW 6.5 SP8: Planning and Implementation Guide*.

A substantial number of alternatives are also provided through YaST (Yet another Setup Tool). They are available in both GUI and text versions, and are accessed at a Linux command prompt by entering `yast`. For more information on YaST, see “**System Configuration with YaST**” ([http://www.novell.com/documentation/sles10/book\\_sle\\_reference/data/cha\\_yast2.html](http://www.novell.com/documentation/sles10/book_sle_reference/data/cha_yast2.html)) in the *SUSE Linux Enterprise Server 10 SP3 Installation and Administration Guide* ([http://www.novell.com/documentation/sles10/book\\_sle\\_reference/data/book\\_sle\\_reference.html](http://www.novell.com/documentation/sles10/book_sle_reference/data/book_sle_reference.html)).

**Table 2-1** references man pages extensively. To access a man page, enter `man command` at the Linux command prompt, where *command* is the Linux counterpart. After reading about the command, type Shift+Q to return to the command prompt. Or alternatively, if you have the KDE desktop loaded, you can view formatted man pages in the Konqueror browser. In the location bar, enter `man: /` to view a list of categories, or enter `man: /command` to view the man page for a specific command.

**Table 2-1** *NetWare/Linux Command Map*

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
#	Specify a line as a comment (used in NCF files).	# !	<p>Comments preceded by a pound sign (#) are not displayed as the shell script runs, but those preceded by an exclamation mark (!) are echoed.</p> <p>For information about shell script files, see <a href="#">Section 3.2, “NCF vs. Shell Script Files,”</a> on page 49.</p>
;	Specify a line as a comment (used in NCF files).	# !	<p>Comments preceded by a pound sign (#) are not displayed as the script runs, but those preceded by an exclamation mark (!) are echoed.</p> <p>For information about script files, see <a href="#">Section 3.2, “NCF vs. Shell Script Files,”</a> on page 49.</p>
ABORT REMIRROR	Stop remirroring a logical partition.	—	<p>This functionality is available through the nsscon utility on OES-Linux.</p> <p>The nsscon utility is installed with the Novell Storage Services RPMs and is documented in “<a href="#">NSS Console</a>” in the <i>NW 6.5 SP8: NSS File System Administration Guide</i>.</p>
ACTIVATEMODULE	Load or start modules that are preloaded by the startup.ncf file or modules that were loaded using the load -s command.	chkconfig	<p>By itself, <code>chkconfig</code> lists all the processes available to be loaded at startup and their current state.</p> <p>Including the name of a service (for example, <code>chkconfig apache2</code>) displays the current state: “on” means that the service starts with the system, “off” means the service doesn’t start with the system, and “unknown service” means that the service is not installed.</p> <p>For configuration options, see the <code>chkconfig</code> man page.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
ADD NAME SPACE	Add support for storing files for other file systems on a NetWare volume.	yast	<p>Access YaST &gt; <i>Network Services</i></p> <p>CIFS (Samba) and other protocols are supported by specific RPMs. For more information, see the <i>OES2 SP2: Samba Administration Guide</i></p> <p>NFS support is native to Linux volumes.</p> <p>If you create an NSS volume on Linux, the name space defaults to UNIX*. Changing the setting to Long using either nssmu or iManager improves performance, especially if you plan to store millions of files on the volume. For more information, see “<i>Configuring the Name Space for an NSS Volume</i>” in the <i>NW 6.5 SP8: NSS File System Administration Guide</i>.</p> <p>For help with YaST, enter <code>yast -h</code> at the command prompt.</p>
ADD SECONDARY IPADDRESS	Add a secondary IP address.	ip addr add	For more information, see the <code>ip</code> man page.
ALERT	Manage NetWare alerts.	—	KDE System Guard includes a Messages sensor you can add to the Worksheet. However, this requires that the KDE GUI is installed and running on the server, which consumes system resources.
ALIAS	Define an alias.	alias	For more information, see the <code>alias</code> man page.
APPLET or APPLETVIEWER	<p>JavaAppletViewer</p> <p>Usage: <code>appletviewer</code> options include: <code>-debug</code>, <code>-encoding</code>, and <code>-J</code> (runtime flag)</p> <p>The <code>-J</code> option is non-standard and subject to change without notice.</p>	appletviewer	For more information, see the <code>appletviewer</code> man page.
ARP	Display and modify the ARP table.	arp	For more information, see the <code>arp</code> man page.
BASH	Use a BASH shell, including a variety of useful system utilities, on NetWare.	/bin/bash	The Bourne Again Shell is the default command line interface on most Linux systems.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
BIND	Link a communication protocol to a network board and its LAN driver.	ethtool mii-tool ip	'For more information, see the man page associated with each command.
BINDERY	Add or remove a bindery context to or from the list of all bindery contexts for this server.	—	The NetWare Bindery was obsolete in NDS®/eDirectory™ starting with NetWare 4 and is not available on OES-Linux.
BROADCAST	Send messages to NCP™ users by username or connection number.	ncpcon send	<p>The send command only sends messages to connections (stations), not to usernames.</p> <p>Also keep in mind that send functionality applies to NCP connections only. Users attached through Samba/CIFS or some other protocol do not receive messages unless they also have an NCP (Novell Client™) connection.</p>
CDDVD	Allow a CD or DVD disk to function as a Novell® Storage Services (NSS) volume.	—	<p>Support for CDs and DVDs is loaded automatically on Linux, and disks are often automatically mounted under /media when inserted.</p> <p>Removable media cannot be accessed as NSS volumes on OES-Linux.</p>
CHARSET	Change the code page currently used by the NetWare server.	yast	<p>Similar functionality is available in YaST &gt; <i>System</i> &gt; <i>Language and System</i> &gt; <i>Keyboard Layout</i> options.</p> <p>For help with YaST, enter <code>yast -h</code> at the command prompt.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
CLEAR STATION	Clear a workstation connection to a NetWare server.	ncpcon connection list  ncpcon connection clear station  ncpcon connection station	<p>You can clear NCP (Novell Client) connections using the <code>ncpcon connection clear</code> command.</p> <p>The <code>ncpcon</code> utility is installed with the NCP Server RPMs and is documented in “<b>NCP Server Console (NCPCON) Utility</b>” in the <i>OES 2 SP2: NCP Server for Linux Administration Guide</i>.</p> <p>Novell Remote Manager for Linux also provides this. For more information, see “<b>Using Novell Remote Manager to Clear NCP Connections</b>” in the <i>OES 2 SP2: NCP Server for Linux Administration Guide</i>.</p> <hr/> <p><b>NOTE:</b> For standard Linux (non-NCP) connections, there is no single command to do this.</p> <p>You must discover how users are connected to the server and then stop the processes associated with those connections.</p> <p>For example, use the <code>ps</code> command with the <code>U</code> option to list processes for the user, and then use <code>kill</code> to stop the root process for the user.</p> <p>You can view how a user is connected on Linux using the <code>finger</code> command.</p> <p>For more information, see the man pages for the commands mentioned above.</p> <hr/>
CLS	Clear the console screen and move the console prompt to the top of the screen.	clear Ctrl+I	For more information, see the <code>clear</code> man page.
CLUSTER ...	Manage clusters.	—	<p>Similar commands are provided for functionality that is currently supported on OES-Linux.</p> <p>For details, see “<b>Console Commands for Novell Cluster Services</b>” in the <i>OES 2 SP2: Novell Cluster Services 1.8.7 for Linux Administration Guide</i>.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
COMPFIX	Repair compressed volumes.	<code>compfix</code>	<p><code>compfix</code> is available starting with OES SP2.</p> <p>For more information, see the <code>compfix</code> man page.</p>
CONFIG	View the system information in the following rows.	<code>sitar</code> <code>sig</code>	<p>Although not functionally the same as CONFIG, both <code>sitar</code> and <code>sig</code> produce very detailed system reports in multiple formats, including HTML and text.</p> <p>For more information, see the <code>sig</code> and <code>sitar</code> man pages.</p> <p>For the NCP server, you can use <code>ncpcon config</code> to display the NCP server configuration information.</p> <p>Linux server information is also available through specific Linux commands. For example, the <code>env</code> command displays all current environment variables and their values.</p> <p>There is also a GPL utility named <code>supportconfig</code> that collects system troubleshooting information. For more information, visit the <a href="http://www.novell.com/cooltools/solutions/tools/16106.html">Cool Solutions Web site (http://www.novell.com/cooltools/solutions/tools/16106.html)</a>.</p>
	♦ NetWare server name	<code>hostname</code> <code>cat /etc/hostname</code>	<p>For more information, see the man pages associated with the <code>hostname</code> and <code>cat</code> commands.</p> <p>The server name also appears at the command prompt by default.</p>
	♦ Internal network number (server ID)	—	<p>This is an IPX™ convention. IPX is a legacy NetWare protocol that will not be ported to Linux. However, it is available on a NetWare virtual machine running on an OES-Linux host server.</p>
	♦ Server up time	<code>uptime</code>	<p>For more information, see the <code>uptime</code> man page.</p>
	♦ Loaded LAN drivers	<code>lsmod</code> <code>ip</code>	<p><code>lsmod</code> lists modules loaded in memory, but not the module versions.</p> <p><code>ip</code> shows the network card configuration.</p>



NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
	♦ Driver version numbers	modinfo dmesg /var/log/ boot.msg	For more information, see the man pages associated with each command.
	♦ Hardware settings	lsmod ip	lsmod lists modules loaded in memory, but not the version.  ip shows the network card configuration.
	♦ Node (station) addresses	ip	For more information, see the ip man page.
	♦ External network number of the cabling scheme	—	This is an IPX convention. IPX is a legacy NetWare protocol that will not be ported to Linux. However, it is available on a NetWare virtual machine running on an OES-Linux host server.
	♦ Board name	yast	This information is available in YaST > <i>Hardware</i> > <i>Hardware Information</i> .  For help with YaST, enter <code>yast -h</code> at the command prompt.
	♦ Frame type	—	This is an IPX convention. IPX is a legacy NetWare protocol that will not be ported to Linux. However, it is available on a NetWare virtual machine running on an OES-Linux host server.
	♦ Networking protocol for each network board	—	This is an IPX convention. IPX is a legacy NetWare protocol that will not be ported to Linux. However, it is available on a NetWare virtual machine running on an OES-Linux host server.
	♦ Server's eDirectory tree and bindery context	ndsstat rcnlds status	For more information, see the ndsstat man page.  To view more rcnlds options, enter <code>rcnlds -help</code> at the command prompt.
CONLOG	Capture and log console messages.	cat /var/ log/ messages	Ctrl+F10 shows the console log in real time.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
CONSOLESAVE	Save the System Console screen buffer to the default file <code>console[n].txt</code> in the default path, or to the path specified with the <code>loggerpath</code> command.	—	<p>Closely related commands are:</p> <p><code>script</code>: makes a typescript of the terminal session.</p> <p><code>tee</code>: reads from standard input and writes to standard output</p> <p><code>screen</code>: a screen manager with VT100/ANSI terminal emulation.</p> <p>For more information, see the respective man pages.</p>
CPUCHECK	Display processor information.	<code>cat /proc/cpuinfo</code>	For more information, see the <code>cat</code> and <code>cpuinfo</code> man pages.
CSET	View or set SET parameters by category.	—	See “SET” on page 42.
CX	View or change the eDirectory context.	—	Use iManager to view the tree.
DELETE SECONDARY IPADDRESS	Delete a secondary IP address.	<code>ip addr del</code>	For more information, see the <code>ip</code> man page.
DHCP SRVR	Manage the Novell DHCP server.	<code>dhcpcd</code>	For more information, see “Administering and Managing DHCP” in the <i>OES 2 SP2: Novell DNS/DHCP Administration Guide for Linux</i> .

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
DISABLE LOGIN	Prevent users from logging in.	ncpcon disable login	<p>You can disable login for NCP file service access using the <code>ncpcon disable login</code> command.</p> <p>The <code>ncpcon</code> utility is installed with the NCP Server RPMs and is documented in “NCPCON” in the <i>OES 2 SP2: NCP Server for Linux Administration Guide</i>.</p> <hr/> <p><b>IMPORTANT:</b> You can’t disable the general login function for externally defined (eDirectory) users. For local users, this is commonly done by changing the login shell indicated in <code>/etc/passwd</code> to <code>/bin/false</code>.</p> <p>Some Linux administrators habitually switch to single-user mode (<code>init 1</code>) to accomplish this. This causes eDirectory and other OES services to shut down, which is probably not desirable in most cases, and is certainly not equivalent to <code>DISABLE LOGIN</code> on NetWare, which allows services to continue to run even though logging in is disabled.</p> <hr/>
DISABLE TTS	Manually disable the NetWare Transaction Tracking System (TTS). Primarily used only by application developers for testing purposes.	—	<p>TTS is not available for NSS volumes on OES-Linux.</p> <p>Journalized Linux file systems, such as Ext3, are capable of providing similar functionality. For example, the <code>Journal</code> mode of Ext3 journaling provides a service similar to TTS. For a brief summary of which file systems support journaling, see “File Systems in Linux” (<a href="http://www.novell.com/documentation/sles10/book_sle_reference/data/cha_filesystems.html">http://www.novell.com/documentation/sles10/book_sle_reference/data/cha_filesystems.html</a>) in the <i>SUSE Linux Enterprise Server 10 SP3 Installation and Administration Guide</i> (<a href="http://www.novell.com/documentation/sles10/book_sle_reference/data/book_sle_reference.html">http://www.novell.com/documentation/sles10/book_sle_reference/data/book_sle_reference.html</a>).</p> <p>For more information, search the Web for the file systems you are using.</p> <hr/>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
DISMOUNT	Make a volume unavailable to users.	ncpcon umount	For NCP volumes, use ncpcon.  The ncpcon utility is installed with the NCP Server RPMs and is documented in “ <b>NCP Server Console (NCPCON) Utility</b> ” in the <i>OES 2 SP2: NCP Server for Linux Administration Guide</i> .  umount lets you unmount Linux volume mount points.
DISPLAY DEVICE STATS	Display I/O statistics for individual devices.	iostat	For more information, see the iostat man page.  Novell Remote Manager for Linux also provides I/O memory and port information from the Manage Hardware page.
DISPLAY ENVIRONMENT	Display current search paths and current values of settable server parameters.	env echo \$PATH	For more information, see the env and echo man pages.
DISPLAY INTERRUPTS	Display hardware interrupt information.	yast	Hardware information for each component is available in YaST > <i>Hardware</i> > <i>Hardware Information</i> .  For help with YaST, enter <code>yast -h</code> at the command prompt.
DISPLAY IPX NETWORKS	Display IPX network information.	—	IPX is a legacy NetWare protocol that will not be ported to OES-Linux. However, it is available on a NetWare virtual machine running on an OES-Linux host server.
DISPLAY IPX SERVERS	Display IPX server information.	—	IPX is a legacy NetWare protocol that will not be ported to OES-Linux. However, it is available on a NetWare virtual machine running on an OES-Linux host server.
DISPLAY MODIFIED ENVIRONMENT	Display all non-default server parameter settings.	—	Similar functionality is not available on OES-Linux.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
DISPLAY MM STATS	Display Media Manager statistics.	—	<p>There are no MM commands for managing multipath I/O and snapshots on OES-Linux.</p> <p>Multipath I/O for NSS is not supported on OES-Linux. For information about multipath I/O for Linux POSIX file systems on SLES 10, see “<a href="#">Managing Multipath I/O for Devices</a>” in the <i>SLES 10 SP3: Storage Administration Guide</i>.</p> <p>NSS Snapshots on OES-Linux are managed through either iManager or NSSMU.</p>
DISPLAY PARTITION LABEL	Display the label of the specified partition.	fdisk -l	.For more information, see the fdisk man page.
DISPLAY PROCESSORS	Display the status of available server processors.	cat /proc/ cpuinfo	For more information, see the cat man page.
DISPLAY SECONDARY IPADDRESS	Display the secondary IP addresses.	ip addr show	For more information, see the ip man page.
DISPLAY SLP ...	Display SLP information.	slptool ...	<p>For example, slptool findsrvs smb.</p> <p>For more information, enter slptool -help at the command prompt.</p>
DOWN	Execute an orderly shutdown.	init 0 init 6 shutdown now	<p>init 0 halts the system, init 6 reboots the server.</p> <p>For more information, see the respective man pages.</p>
DSDIAG	Document eDirectory; check tree health; diagnose problems.	—	This functionality is provided through <b>IMONITOR</b> .
DSLOG	Manage eDirectory error logs.	—	Use the n4u.server.log-levels and n4u.server.log-file parameters in the /etc/opt/novell/eDirectory/conf/nds.conf configuration file.
DSMERGE	Merge and rename eDirectory trees; display time synchronization information for all servers in a tree.	ndsmerge	<p>For more information, see the ndsmerge man page.</p> <p>See also <b>IMONITOR</b>.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
DSREPAIR	Maintain and repair the database of a Novell eDirectory tree.	ndsrepair	For more information, see the <code>ndsrepair</code> man page.  See also <b>IMONITOR</b> .
DTRACE	A menu-driven trace utility for U.S. Robotics* ISDN Allegra adapters.	—	This is not DSTRACE.
ECHO ...	Enable (ECHO ON) or disable (ECHO OFF) the displaying of commands executed from an NCF file.	—	In shell script files, the echo command causes the comment that follows it to be displayed, as does preceding the comment with an exclamation mark (!).  Comments preceded by a pound sign (#) are not displayed as the script runs.  For information about script files, see <b>Section 3.2, “NCF vs. Shell Script Files,”</b> on page 49.
EDIRUTIL	Access all of the eDirectory back-end utilities remotely as well as on the server.	edirutil	For more information, enter <code>edirutil -h</code> .
EDIT	Create or modify a text file on a boot, DOS, USB, or NetWare partition.	vi vim	For help, enter <code>vi -h</code> , or <code>man vim</code> .
ENABLE LOGIN	Reenable the login function after using DISABLE LOGIN. Enable the supervisor account (bindery only) when the account has been locked by the intruder detection function.	ncpcon enable login	See <b>“DISABLE LOGIN”</b> on page 19 for additional important information.
ENABLE TTS	Manually enable the NetWare Transaction Tracking System (TTS).  This is primarily used only by application developers for testing purposes.	—	TTS is not available for NSS volumes on OES-Linux.  Journaled Linux file systems, such as Ext3, are capable of providing similar functionality. For example, the <code>Journal</code> mode of Ext3 journaling provides a service similar to TTS. For more information, search the Web for information about the file systems you are using.
ENV	Display or set C Library environment variables.	env	For more information, enter <code>info env</code> at the command prompt, or see the <code>env</code> man page.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
ENVSET	Display or set Java* environment variables.	—	You can use the <code>export</code> command to set environment variables. For more information, see the <code>export</code> man page.
EXTCHECK	Check a jar file for title and version conflicts with any installed extensions.	<code>extcheck</code>	For more information, see the <code>extcheck</code> man page.
FILE SERVER NAME	Set the file server name in <code>autoexec.ncf</code> .	—	<code>Autoexec.ncf</code> is a NetWare file, so this command has no direct counterpart.  However, <code>hostname</code> lets you set the system's host name. For more information, see the <code>hostname</code> man page.
FILER (In DOS from a Novell Client)	Manage files and directories in the file system.	—	Filer is a legacy DOS-based tool. There are numerous shell commands for managing (copying, deleting, moving, etc.) files.
FIXNAMES	Verify that files in the specified path on an NSS volume have legal names for the current code page.	—	This command has not been ported to Linux for NSS.  For Linux traditional file systems, you can use the <code>convmv</code> utility to convert filenames from one language code to another. For more information, see the <code>convmv</code> man page.
FLAG (In DOS from a Novell Client)	View or modify file and directory attributes, owner, etc.	<code>chmod</code> (Linux only) <code>attrib</code> (NSS only) <code>nssmu</code> (NSS only)	You can also use iManager for this.  Understanding and working with Linux file attributes and ownership mechanisms requires training beyond the scope of this guide. For an introduction, see the “Access Control Lists in Linux” ( <a href="http://www.novell.com/documentation/sles10/book_sle_reference/data/cha_acls.html">http://www.novell.com/documentation/sles10/book_sle_reference/data/cha_acls.html</a> ) and “Users and Access Permissions” ( <a href="http://www.novell.com/documentation/sles10/book_sle_reference/data/sec_system_userperm.html">http://www.novell.com/documentation/sles10/book_sle_reference/data/sec_system_userperm.html</a> ) in the <i>SUSE Linux Enterprise Server 10 SP3 Installation and Administration Guide</i> ( <a href="http://www.novell.com/documentation/sles10/book_sle_reference/data/book_sle_reference.html">http://www.novell.com/documentation/sles10/book_sle_reference/data/book_sle_reference.html</a> ).

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
FORMAT	Format a local FAT volume.	makefs	<p>For NSS volumes, you can use NSSMU or the iManager Storage plug-in. Note, however, that NSS volumes are managed by EVMS.</p> <p>Although it is possible to use <code>makefs</code> to create NSS volumes on devices that are managed by non-EVMS volume managers, Novell does not support this option, and there are several critical feature limitations that apply. For more information, see <a href="#">“Using NSS on Devices Managed by Non-EVMS Volume Managers (Linux)”</a> in the <i>NW 6.5 SP8: NSS File System Administration Guide</i>.</p>
HEALTH	<p>View the status of a server’s overall health as determined through iManager.</p> <p>The <code>ALL</code> option displays the health of individual components.</p>	—	Use Novell Remote Manager > <i>Diagnose</i> > <i>Health Monitor</i> to monitor the status of an OES-Linux server.
HELP	View descriptions and syntax for commands.	<code>man command</code>	For more information on using <code>man</code> pages, see the <code>man man</code> page.
HIDESCREEN	Hide a screen for a utility that is running at the server console.	—	You can redirect output from the utility to null. However, this is not recommended.
HTTPBIND	Set an IP address, port, etc. for HTTPSTK to open.	—	In Novell Remote Manager, click the Config icon, then edit the <code>httpstkd</code> config file.
HTTPCLOSEPORT	Close a port on all IP addresses bound to HTTPSTK.	—	In Novell Remote Manager, click the Config icon, then edit the <code>httpstkd</code> config file.
HTTPOPENPORT	Open a port on all IP addresses bound to HTTPSTK and optionally enable SSL on the port.	—	In Novell Remote Manager, click the Config icon, then edit the <code>httpstkd</code> config file.
HTTPUNBIND	Remove an IP address:port that HTTPSTK has open. If no port is specified, all ports are closed.	—	In Novell Remote Manager, click the Config icon, then edit the <code>httpstkd</code> config file.
ICAPTURE (In DOS on a Novell Client)	Capture LPT ports and redirect the output to iPrint printers.	—	<p>This command applies to legacy NetWare printing, which is no longer supported.</p> <p>iPrint is the OES printing solution.</p>



NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
ICE	Import/Export LDIF files; migrate LDAP data; compare and update schemas; use a template to load information into eDirectory.	ice	For more information, see the <code>ice</code> man page.
IDLJ	Generate Java bindings from an IDL file.	idlj	For more information, see the <code>idlj</code> man page.
IFCONFIG	Configure network interface parameters.	ip ethtool mii-tool yast	The <code>ip</code> command performs some configuration of network cards, but the changes are not permanent.  Instead, use <code>ethtool</code> for modifications on the fly, or <code>mii-tool</code> for older cards. Or use YaST to configure network cards permanently.
IMONITOR	Monitor eDirectory and the servers it contains using a Web browser.	—	In a Web browser go to <code>http://server_name:8008</code> .  iMonitor is also accessible through iManager > <i>Roles and Tasks</i> icon > <i>eDirectory Maintenance</i> > <i>Repair via iMonitor</i>
INETCFG	Set up and customize your internetworking configuration for IPX, IP, and AppleTalk*.	yast ethtool mii-tool	For more information, see the respective man pages.
INITIALIZE SYSTEM	Enable the multiprotocol router configuration (execute the system <code>netinfo.cfg</code> file).	rcnetwork start yast	For help, enter <code>rcnetwork -h</code> .  Routing is configured through YaST.  For help with YaST, enter <code>yast -h</code> at the command prompt.
INVENTORY	Generate a volume inventory for use by NRM.	—	In Novell Remote Manager, click <i>Volume Inventory</i> and select the volume name.
IPCRM	Remove System V IPC semaphore or shared memory.	ipc_rmid	For more information, see the <code>ipc</code> man page.
IPCS	View allocated System V semaphores and shared memory segments.	ipc_stat	For more information, see the <code>ipc</code> man page.
IPRNTCMD (DOS workstation)	Install, remove, or set a printer as the default printer.	—	This is a DOS printing command.  iPrint is the OES printing solution.
IPTRACE	Display the route that IP packets take across the network.	tracert	For more information, see the <code>tracert</code> man page.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
IPX INTERNAL NET	View the server's internal IPX network address.	—	IPX is a legacy NetWare protocol and will not be ported to OES-Linux. However, it is available on a NetWare virtual machine running on an OES-Linux host server.
IPXCON, IPXPING, IPXS	Manage IPX.	—	IPX is a legacy NetWare protocol and will not be ported to OES-Linux. However, it is available on a NetWare virtual machine running on an OES-Linux host server.
JAVA	Start the Novell JVM* for NetWare product. .	java	For more information, see the <code>java</code> man page.
JAR	Manage Java archives.	jar	For more information, see the <code>jar</code> man page.
JARSIGNER	Sign and verify jar files.	jarsigner	For more information, see the <code>jarsigner</code> man page.
JAVA	Start the Novell JVM for NetWare product.	java	For more information, see the <code>java</code> man page.
JAVAC	Compile Java source code into Java bytecodes.	javac	For more information, see the <code>javac</code> man page.
JAVADOC	Generate API documentation from Java source code.	javadoc	For more information, see the <code>javadoc</code> man page.
JAVAH	Produce C header files and C source files from a Java class.	javah	For more information, see the <code>javah</code> man page.
JAVAP	Disassemble a Java class file.	javap	For more information, see the <code>javap</code> man page.
JDB	Debug Java.	jdb	For more information, see the <code>jdb</code> man page.
KEYB	Change the console keyboard type.	yast	You can change keyboard and language settings in YaST.  For help with YaST, enter <code>yast -h</code> at the command prompt.
KEYTOOL	Manage keys and certificates for Java.	keytool	For more information, see the <code>keytool</code> man page.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
KF8	Enable or disables pausing between commands executed from NCF files.	—	<p>There is no simple command or switch to enable pausing in script file execution.</p> <p>To enable manual confirmation of steps in the boot process, edit <code>/etc/sysconfig/boot</code> and change the <code>PROMPT_FOR_CONFIRM</code> parameter to "yes".</p> <p>For information about script files, see <a href="#">Section 3.2, "NCF vs. Shell Script Files,"</a> on page 49.</p>
LANGUAGE	Set the language for subsequently loaded modules.	yast	<p>All language settings are managed using YaST.</p> <p>For help with YaST, enter <code>yast -h</code> at the command prompt.</p>
LFVMOUNT	Mount all local FAT volumes not recognized by DOS and assign them a local drive letter.	mount	<p>Parameters specified with the <code>mount</code> command determine the file systems mounted and attributes associated with the file systems.</p> <p>Drive letters are not used on Linux.</p> <p>For more information, see the <code>mount</code> man page.</p>
LFVOLUMES	List the local FAT volumes currently mounted.	mount	<p>Used alone, the <code>mount</code> command shows the currently mounted volumes.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
LIST DEVICES	List the storage devices on the server and register new devices with the server's Media Manager database.	cat /dev/ device ls /dev yast	<p>Linux has many devices, each of which contains information you can view by "walking the /proc file system."</p> <p>Understanding Linux devices and the information displayed requires training beyond of the scope of this guide. For more information, see the <a href="http://www.novell.com/documentation/sles10/book_sle_reference/data/book_sle_reference.html">SUSE Linux Enterprise Server 10 SP3 Installation and Administration Guide</a> (<a href="http://www.novell.com/documentation/sles10/book_sle_reference/data/book_sle_reference.html">http://www.novell.com/documentation/sles10/book_sle_reference/data/book_sle_reference.html</a>).</p> <p>To display the currently mounted file systems, enter the <code>mount</code> command with no arguments.</p> <p>You can display partitions in YaST &gt; <i>System</i> &gt; <i>Partitioner</i>, but be careful to exit without making changes.</p> <p>For help with YaST, enter <code>yast -h</code> at the command prompt.</p>
LIST FAILOVER DEVICES	List the multipath devices and their paths.	—	NSS multipath I/O is not supported on OES-Linux. For information about multipath I/O on SLES 10, see "Managing Multipath I/O for Devices" in the <a href="#">SLES 10 SP3: Storage Administration Guide</a> .
LIST PARTITIONS	List the partitions on all mounted storage devices.	fdisk -l	For more information, see the <code>fdisk</code> man page.
LIST STORAGE ADAPTERS	List the registered storage adapters.	hwinfo -- storage- ctrl	The same comments apply as for <b>LIST DEVICES</b> above.
LIST STORAGE DEVICE BINDINGS	List all Custom Device Modules (CDMs) bound to a particular device.	—	CDM drivers are unique to the NetWare architecture.
LOAD	Link NetWare loadable modules to the operating system.	—	<p>Load and run commands are not used on Linux. Generally, to execute files, you simply enter the filename or path/filename.</p> <p>Most services are run from the <code>/etc/init.d</code> directory.</p> <p>OES services have <code>start</code>, <code>stop</code>, and <code>restart</code> options. For example, to restart eDirectory, enter <code>/etc/init.d/nds restart</code> at the command prompt.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
LOGGERCLEAR	Clear the logger screen.	—	<p>The log path is hard-coded in Linux to <code>/var/log/messages</code>.</p> <p>However, some service configuration files include configuration settings that let you change the log path.</p>
LOGGERPATH	Change the directory where the <code>logger.txt</code> file is saved.	—	<p>The log path is hardcoded in Linux to <code>/var/log/messages</code>.</p> <p>However, some service configuration files include configuration settings that let you change the log path.</p>
LOGGERSAVE	Save the logger screen buffer to the <code>logger.txt</code> file.	—	<p>Everything gets written to <code>/var/log/messages</code>, unless a specific service configuration file dictates otherwise.</p>
LOGIN (DOS workstation)	Access the network by logging in to a server and running a login script.	—	<p>Login on Linux is a different concept than on NetWare. You log in to a shell session with the server, which is analogous to accessing the console prompt on a NetWare server.</p>
LOGOUT (DOS workstation)	Exit the network or log out of servers.	—	<p>The same comments apply as for <b>LOGIN</b> above.</p>
MAGAZINE ...	Respond to the screen prompts <code>Insert Magazine</code> and <code>Remove Magazine</code> .	—	<p>There is no directly corresponding utility</p>
MAP (DOS workstation)	View drive mappings; Create or change network or search drive mappings; Map a drive to a fake root directory (for applications that must use a root directory)	—	<p>The <code>mount</code> command used alone shows both local and remote mount points—the connections between file systems (either local or remote) and a directory on the server. You access the file system (local or remote) by accessing the local directory.</p> <p>Drive letters are not used on Linux. However, if you install the NCP server, Novell Clients can then map drives to NCP volumes on OES-Linux servers.</p>
MEDIA ...	Respond to the screen prompts <code>Insert Media</code> and <code>Remove Media</code> .	—	<p>On Linux, all media connections, including remote connections and removable media, are handled through the <code>mount</code> command.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
MEMORY	Display the total amount of installed memory that the operating system can address.	<code>free</code> <code>cat /proc/meminfo</code>	<p>There's no memory command per se on Linux. However, the <code>top</code> command gives a good start on what's installed, available, being used by buffers, etc.</p> <p>If you want to see a GUI display, you must be running the KDE graphical interface and use KDE System Guard.</p>
MEMORY MAP	Display the amount of memory (in bytes) allocated to DOS and to the server.	<code>top</code>	<p>You can also view memory information in Novell Remote Manager (NRM). To access NRM in your Web browser, go to <code>http://server_name:8008 &gt; Manage Linux &gt; View Memory Information</code>.</p> <p>There is, of course, no memory allocated to DOS when Linux is running, even if there's a separate DOS partition on the hard drive.</p>
MIRROR STATUS	View the status of mirrored disk partitions. View the percentage of mirrored data on each partition.	—	<p>This functionality is available through the <code>nsscon</code> utility on OES-Linux.</p> <p>The <code>nsscon</code> utility is installed with the Novell Storage Services RPMs and is documented in “<b>NSS Console</b>” in the <i>NW 6.5 SP8: NSS File System Administration Guide</i>.</p>
MM ...	Manage storage media.	—	See the explanation for <b>DISPLAY MM STATS</b> .
MODULES	List the currently loaded NLM programs.	<code>ps -eaf</code>	<p>The <code>ps</code> command displays currently running processes and <code>ps -eaf</code> is roughly equivalent to <code>MODULES</code> on NetWare. For more information, see the <code>ps</code> man page or enter <code>ps -?</code>.</p> <p>Use <code>lsmod</code> to view kernel modules.</p>
MONITOR	View server statistics and activity under two categories: General Information Options, and Available Options, as listed below.	—	<p>Most of the information you traditionally get through <code>MONITOR</code> is available in Novell Remote Manager (NRM). To access NRM, browse to <code>http://server_name:8008</code> in your Web browser.</p> <p>For NCP server, you can display a number of statistics using <code>ncpcon</code>, including Server up time, Packets in, Packets dumped, etc. For more information, see “<b>NCPCON</b>” in the <i>OES 2 SP2: NCP Server for Linux Administration Guide</i>.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
<b>General Information</b>			
<b>Options in Monitor:</b>			
♦ Operating system version and date	—		See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
♦ Server name: <i>server_name</i> in Directory tree <i>tree_name</i>	ndsstat		For more information, see the ndsstat man page.  Also see the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
♦ Utilization	top		For more information, see the top man page.  See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
♦ Server Up Time	uptime top		For more information, see the uptime and top man pages.  Also see the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
♦ Online Processors	—		See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
♦ Original Cache Buffers	—		See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .  You can also enter <code>cat /proc/mem/meminfo</code> at the command prompt to get some of this information.
♦ Total Cache Buffers	—		See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
♦ Dirty Cache Buffers	—		See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
♦ Long Term Cache Hits	—		See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
♦ Current Disk Requests	—		See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
	♦ Packet Receive Buffers	—	See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
	♦ Directory Cache Buffers	—	See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
	♦ Maximum Service Processes	—	See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
	♦ Current Service Processes	—	See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
			The information is presented differently on Linux, but it is there.
	♦ Current Connections	—	See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
	♦ Open Files	—	See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
	<b>Available Options in Monitor:</b>		
	♦ Connections	—	See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
	♦ Storage Devices	—	See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
	♦ Volumes	ncpcon df -h	<p>You can see local, but not unallocated file systems.</p> <p>The ncpcon utility is installed with the NCP Server RPMs and is documented in “NCPCON” in the <i>OES 2 SP2: NCP Server for Linux Administration Guide</i>.</p> <p>To view mounted volumes, use nsscon, ncpcon, or mount, depending on the volume types you are monitoring.</p> <p>To view the utilization of Linux partitions, enter df -h at the command prompt.</p>
	♦ LAN/WAN Drivers	lsmod	For more information, see the lsmod man page.



NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
	♦ Loaded Modules	—	See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
	♦ File Open/Lock Activity	—	For NCP volumes only, see the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
	♦ Disk Cache Utilization	—	See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
	♦ System Resources	—	A NetWare concept that is not applicable to OES-Linux.
	♦ Virtual Memory	vmstat	For more information, see the <code>vmstat</code> man page.
	♦ Kernel	—	See the <i>OES 2 SP2: Novell Remote Manager for Linux Administration Guide</i> .
	♦ Server Parameters	—	Linux doesn't have server parameters.
MOUNT	Make a volume available to users.	<p><code>mount</code> (for traditional Linux volumes)</p> <p><code>nsscon</code> (use the <code>mount</code> option for NSS volumes)</p> <p><code>nssmu</code> (for the first mount of encrypted NSS volumes after a reboot)</p>	<p>For NSS volumes, in <code>nssmu</code>, select volumes, then press F7.</p> <p>For encrypted NSS volumes, the <code>nssmu</code> utility is required for mounting the encrypted volume on the first mount following a system reboot, because you must enter the encryption password to activate the volume. Thereafter, you can use the <code>mount</code> command in <code>nsscon</code>.</p> <p>The <code>nsscon</code> utility is installed with the Novell Storage Services RPMs and is documented in “NSS Console” in the <i>NW 6.5 SP8: NSS File System Administration Guide</i>.</p> <p>The <code>nssmu</code> utility is installed with the Novell Storage Services RPMs and is documented in “NSS Management Utility (NSSMU) Quick Reference” in the <i>NW 6.5 SP8: NSS File System Administration Guide</i>.</p>
NAME	Display the server name.	<code>hostname</code>	<p>For more information, see the <code>hostname</code> man page.</p> <p>Also, the server name appears at the command prompt by default.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
NAMED	Manage Novell DNS services.	novell-named	<p>For more information, see “<a href="#">Administering and Managing a DNS Server</a>” in the <i>OES 2 SP2: Novell DNS/DHCP Administration Guide for Linux</i>.</p> <hr/> <p><b>IMPORTANT:</b> The SLES 10 base includes named, but this is not integrated with eDirectory.</p>
NATIVE2ASCII	Convert text to Unicode* Latin-1 for use by Java.	native2ascii	For more information, see the <code>native2ascii</code> man page.
NCMCON	Control and monitor PCI Hot Plug.	—	Hot Plug monitoring is available for only some hardware. Messages are commonly logged in <code>/var/log/messages</code> .
NCOPY	Specify your intention for copying a compressed file to a compressed volume or a non-compressed volume.	—	<p>This functionality for NSS on Linux is provided through the Novell Client, installed on either a client or the OES-Linux server.</p> <p>There is no equivalent for Linux POSIX file systems.</p>
NCS DEBUG	Save a record of all NCS port activity in an ASCII text file named <code>ncstrace.log</code> in the <code>sys:system</code> directory.	—	See “ <a href="#">Console Commands for Novell Cluster Services</a> ” in the <i>OES 2 SP2: Novell Cluster Services 1.8.7 for Linux Administration Guide</i> .
NDIR	View file attributes and compression information for all files in a directory.	ls	For more information, see the <code>ls</code> man page.
NETSTAT	Monitor the network status.	netstat	For more information, see the <code>netstat</code> man page.
NSLOOKUP	Diagnose DNS setup problems or DNS problems in an application.	dig	The <code>nslookup</code> command has been deprecated on Linux.
NSS	Manage NSS at the command line.	nsscon	The <code>nsscon</code> utility is installed with the Novell Storage Services RPMs and is documented in “ <a href="#">NSS Console</a> ” in the <i>NW 6.5 SP8: NSS File System Administration Guide</i> .
NSSMU	Manage NSS storage media on a server.	nssmu	The <code>nssmu</code> utility is installed with the Novell Storage Services RPMs and is documented in “ <a href="#">NSS Management Utility (NSSMU) Quick Reference</a> ” in the <i>NW 6.5 SP8: NSS File System Administration Guide</i> .

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
NSWEB	Start and stop the NetWare Web Manager and NetWare Enterprise Web Server.	—	NetWare Web Manager is not available on Linux.
NVXADM	Start and stop the NetWare Web Manager.	—	NetWare Web Manager is not available on Linux.
NVXWEB	Start and stop the NetWare Web Manager.	—	NetWare Web Manager is not available on Linux.
NWBOOT	Change NetWare boot options to use DOS or boot directly to NetWare.	—	For information on SLES 10 booting, see “ <a href="http://www.novell.com/documentation/sles10/book_sle_reference/data/cha_boot.html">Booting and Configuring a Linux System</a> ” ( <a href="http://www.novell.com/documentation/sles10/book_sle_reference/data/cha_boot.html">http://www.novell.com/documentation/sles10/book_sle_reference/data/cha_boot.html</a> ) in the <i>SUSE Linux Enterprise Server 10 SP3 Installation and Administration Guide</i> ( <a href="http://www.novell.com/documentation/sles10/book_sle_reference/data/book_sle_reference.html">http://www.novell.com/documentation/sles10/book_sle_reference/data/book_sle_reference.html</a> ).
NWCONFIG	Manage the server and install additional products.	yast	YaST is the tool for installing OES-Linux and OES services. Many configuration parameters are similar to NetWare.  For help with YaST, enter <code>yast -h</code> at the command prompt.
NWPING	Ping a remote host from a NetWare server.	ping	For more information, see the <code>ping</code> man page.
NWTRACE	Print the route that packets take to the network host.	traceroute	For more information, see the <code>traceroute</code> man page.
NWTRAP	Manage SNMP traps on NetWare.	net-snmp net-snmp- utils	For more information, see the respective man pages.
OFF	Clear the console screen.	clear Ctrl+I	For more information, see the <code>clear</code> man page.
ORBD	Enable clients to transparently locate and invoke persistent objects on servers in the CORBA* environment.	orbd	For more information, see the <code>orbd</code> man page.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
PAUSE	Cause NCF file execution to wait for a key to be pressed.	—	<p>There is no simple command or switch to enable pausing in shell script file execution.</p> <p>To enable manual confirmation of steps in the server boot process, edit <code>/etc/sysconfig/boot</code> and change the <code>PROMPT_FOR_CONFIRM</code> parameter to yes.</p> <p>For information about script files, see <a href="#">Section 3.2, “NCF vs. Shell Script Files,”</a> on page 49.</p>
POLICYTOOL	Create a manage policy files for Java.	<code>policytool</code>	For more information, see the <code>policytool</code> man page.
PING	Send an Internet Control Message Protocol (ICMP) echo request packet to an IP node on your internetwork.	<code>ping</code>	For more information, see the <code>ping</code> man page.
PPPCON	View Point-to-Point Protocol (PPP) interface configuration and statistical information.	<code>yast</code>	<p>Point-to-Point interfaces are configured in YaST &gt; <i>Network Devices</i>.</p> <p>For help with YaST, enter <code>yast -h</code> at the command prompt.</p>
PPPTTRACE	Debug PPP data link problems.	—	This is a NetWare utility that is not ported to Linux.
PROTECT	Load NLM programs into a protected address space.	—	Protected address space is a NetWare concept.
PROTECTION	List the protected address spaces, or add/remove/restart functionality from an existing address space.	—	Protected address space is a NetWare concept.
PROTOCOL	View the protocols registered.	<code>ip</code>	For more information, see the <code>ip</code> man page.
PROTOCOL REGISTER	Register additional protocols and frame types.	<code>ip</code>	For more information, see the <code>ip</code> man page.
PSEVER	Monitor and manage printers and print queues (legacy).	—	<p>This is for managing legacy NetWare printing.</p> <p>iPrint is the OES printing solution.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
PURGEVOLUME	Purge all deleted files from an NSS volume.	<code>ncpcon purge volume nss_volume_name</code>	<p>This functionality is available through the <code>ncpcon</code> utility for NSS volumes that have had the Salvage attribute enabled previously.</p> <p>The <code>ncpcon</code> utility is installed with the Novell Storage Services™ RPMs and is documented in “<b>NCP Server Console (NCPCON) Utility</b>” in the <i>OES 2 SP2: NCP Server for Linux Administration Guide</i>.</p> <p>Salvage and Purge are NSS file system features.</p>
PVER	View the version of OES-NetWare installed on the server.	<code>cat /etc/novell-release</code>	<p>You can also use <code>cat /etc/SuSE-release</code> to display the version and patch level of the server.</p> <p>You can also use the <code>oes-SPident</code> and <code>SPident</code> commands to view the patch status of OES and SLES, respectively.</p> <p>For more information, see the respective man pages.</p>
RAID STATUS	View the status of the software RAID 0 RAID 1 and RAID 5 devices.	—	<p>The <code>nssmu</code> utility is used to manage software RAIDs for NSS volumes and is installed with the Novell Storage Services RPMs. It is documented in “<b>NSS Management Utility (NSSMU) Quick Reference</b>” in the <i>NW 6.5 SP8: NSS File System Administration Guide</i>.</p>
RCONAG6	Allow remote console access to the server.	—	<p>Novell Remote Manager has a secure console.</p> <p>You can also use SSH (or VNC for GUI access).</p> <p>Telnet is not secure and therefore not recommended.</p>
RCONPRXY	Allow RConsoleJ to access target servers.	—	<p>Novell Remote Manager has a secure console.</p> <p>You can also use SSH (or VNC for GUI access).</p> <p>Telnet is not secure and therefore not recommended.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
RCONSOLEJ	Remotely control a NetWare server.	—	Novell Remote Manager has a secure console.  You can also use SSH (or VNC for GUI access).  Telnet is not secure and therefore not recommended.
REBUILD	Recover corrupted Novell Storage Services (NSS) pools.	ravsui ravview fsck	The ravsui and ravview utilities are installed as part of Novell Storage Services NSS.  Use ravsui to rebuild or verify an NSS pool on Linux that is in a maintenance state.  Use ravview to dump specified NSS rebuild or verify files to a human-readable file format.  For help with ravsui and ravview, use the <code>-h</code> option. For more information about fsck, see the <code>fsck</code> man page.
RECORD	Record command sequences that you enter at the console over and over.	—	Similar functionality is available through shell scripting, a topic that is beyond the scope of this guide but is treated extensively in industry publications.  Also, bash includes a History Expansion capability that some find useful. For more information, see the “History Expansion” section of the <code>bash</code> man page.
REGISTER MEMORY	Configure the operating system to recognize installed memory above the amount of memory that is automatically registered.	—	This is NetWare functionality that doesn’t apply to Linux.
REINITIALIZE SYSTEM	Enable configuration changes made since the commands in the <code>netinfo.cfg</code> file were executed.	rcnetwork restart	For help, enter <code>rcnetwork -h</code> at the command prompt.
REM	Specify a line as a comment (used in NCF files).	# !	Comments preceded by a pound sign (#) are not displayed as the script runs, but those preceded by an exclamation mark (!) are echoed.  For information about script files, see <a href="#">Section 3.2, “NCF vs. Shell Script Files,”</a> on page 49.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
REMIRROR PARTITION	Start the remirroring of a logical NSS partition.	—	<p>This functionality is available through the <code>nsscon</code> utility on OES-Linux.</p> <p>The <code>nsscon</code> utility is installed with the Novell Storage Services RPMs and is documented in “<a href="#">NSS Console</a>” in the <i>NW 6.5 SP8: NSS File System Administration Guide</i>.</p>
REMOVE NETWORK ADAPTER	Unload one LAN driver when the LAN driver has been loaded multiple times to support multiple boards.	—	On Linux it is common for drivers to support multiple instances of hardware. Loading is done only once and removal should not be necessary.
REMOVE NETWORK INTERFACE	Unload one frame type when there are multiple frame types loaded with one LAN driver.	<code>ip</code>	For more information, see the <code>ip</code> man page.
REMOVE STORAGE ADAPTER	Remove one instance of a storage driver.	—	<p>Although <code>rmmod module_name</code> does unload a kernel module, this is not recommended.</p> <p>On Linux it is common for drivers to support multiple instances of hardware. Loading is done only once and removal should not be necessary.</p>
REMOVEMODULE	Remove modules that are preloaded by the <code>startup.ncf</code> file or modules that were loaded using the <code>load -s</code> command.	<code>chkconfig</code>	For more information, see the <code>chkconfig</code> man page.
REPLACE	Unload and reload a specific module in one step.	—	Performing an equivalent action on Linux can prevent the system from running. Not recommended.
REPLAY	Execute a list of commands that were recorded in and saved in a session using the <code>RECORD</code> command.	—	This is related to the comment for the <code>RECORD</code> utility. Using your chosen shell script methods, run the script you have created.
RESET ENVIRONMENT	Reset server parameters that have been modified to their default values.	—	This is NetWare functionality that is available for selected services in YaST but not at the command prompt.
RESET NETWORK ADAPTER	Reset a network adapter manually.	<code>ifdown</code> <code>ifup</code>	For more information, see the respective man pages.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
RESET NETWORK INTERFACE	Restart a logical board that has been shut down using the SHUTDOWN NETWORK INTERFACE command.	ifdown ifup	For more information, see the respective man pages.
RESET ROUTER	Reset the router table in the server if the table becomes inaccurate or corrupted.	rcnetwork restart yast	For help with rcnetwork, enter rcnetwork -h at the command prompt.  For help with YaST, enter yast -h at the command prompt.
RESET SERVER	Bring down the server and then restart it immediately.	init 6 shutdown -r now	For more information, see the respective man pages.
RESTART SERVER	Bring down the server and then restart it immediately.	init 6 shutdown -r now	For more information, see the respective man pages.
RIGHTS	View or modify user or group rights for files, directories, and volumes.	rights	The rights command works only on NSS file systems.
RMIC	Generate stub and skeleton class files (JRMF protocol) and stub and tie class files (IIOP protocol) for Java.	rmic	For more information, see the rmic man page.
RMID	Start the activation system daemon for Java.	rmid	For more information, see the rmid man page.
RMIREGISTRY	Create and start a remote object registry on the specified port on the current host.	rmiregistry	For more information, see the rmiregistry man page.
ROUTE	Pass frames (packets) from NetWare through IBM*-compatible source route bridges.	route	For more information, see the route man page.
ROUTECON	Manipulate the routing tables manually.	route	For more information, see the route man page.
SCAN ALL	Scan all LUNs of all SCSI adapters in the server or all LUNs associated with a designated SCSI adapter.	iscsi*	ISCSI support is not installed by default.  After installing, type man iscsi and press the Tab key to view the related commands.



NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
SCAN FOR NEW DEVICES	Scan on LUN0 of SCSI adapters and to register new devices with the Media Manager so that they are available to the operating system.	<code>rescan-scsi-bus.sh</code>	<p>ISCSI support is not installed by default.</p> <p>After installing, type <code>man iscsi</code> and press the Tab key to view the related commands.</p> <p>See also “<a href="#">Scanning for Devices (Linux)</a>” in the <i>NW 6.5 SP8: NSS File System Administration Guide</i>.</p>
SCRSAVER	Lock the server console and activate a screen saver for the console display.	—	<p>There are no screen savers associated with shell sessions on Linux. You should simply use the <code>exit</code> command to close any shell sessions you do not want to have open.</p>
SEARCH	Specify search paths for NLM and <code>.ncf</code> files; add/delete search paths; view current search paths.	<code>export</code>	<p>Modify the PATH and <code>export</code> it.</p> <p>For more information, see the <code>export</code> man page.</p>
SECURE CONSOLE	Prevent NLM programs from being loaded from any directory other than the boot directories; prevent keyboard entry into the operating system debugger; prevent the server date and time from being changed	—	<p>The concept of securing the console through a command doesn't exist in Linux.</p> <p>You should always limit physical and remote access to the Linux console and never leave a root session open.</p>
SEND	Send messages to NCP users by username or connection number.	<code>ncpcon send</code>	<p>For NCP connections, the <code>send</code> command only sends messages to connections (stations), not to usernames.</p> <p>Also keep in mind that users attached through Samba/CIFS or some other protocol do not receive messages unless they also have an NCP connection.</p> <p>For more information about sending messages using <code>ncpcon</code>, see “<a href="#">Sending Messages to Logged-In Users</a>” in the <i>OES 2 SP2: NCP Server for Linux Administration Guide</i>.</p> <p>For more information about sending messages using Novell Remote Manager, see “<a href="#">Sending Messages to Logged-In Users</a>” in the <i>OES 2 SP2: NCP Server for Linux Administration Guide</i>.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
SERIALVER	Get the serialVersionUID for one or more classes in a form suitable for copying into an evolving class.	serialver	For more information, see the <code>serialver</code> man page.
SERVER	Start and run NetWare on the server.	—	<p>This is roughly equivalent to the running the Linux kernel. There is no direct equivalent.</p> <p>OES-Linux boots using the GRUB boot manager. There is no direct connection between Linux and a bootable DOS partition (if present)</p>
SERVERTOOL	Register, unregister, start up, and shut down a persistent server.	servertool	For more information, see the <code>servertool</code> man page.
SET	View and configure operating system parameters.	—	<p>There is no direct equivalent of the concept of SET parameters in Linux.</p> <p>You can set environment variables using the <code>export</code> command. For more information, see the <code>export</code> man page.</p> <p>To make configurations persistent, you must edit the configuration file associated with the service.</p>
SET TIME	Set the date and time on the server.	—	<p>eDirectory requires a synchronized date and time on all OES-Linux servers in the same tree.</p> <p>For more information, see “<a href="#">Time Services</a>” in the <i>NW 6.5 SP8: Planning and Implementation Guide</i>.</p>
SET TIME ZONE	Set the time zone on the server.	—	<p>eDirectory requires a synchronized date and time on all OES-Linux servers in the same tree.</p> <p>For more information, see “<a href="#">Time Services</a>” in the <i>NW 6.5 SP8: Planning and Implementation Guide</i>.</p>
SETENV	Set C Library environment variables.	—	<p>You can set environment variables using the <code>export</code> command <code>export variable=value</code>.</p> <p>For more information, see the <code>export</code> man page.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
SHOWSCREEN	Restore a screen that has been hidden by the <b>HIDSCREEN</b> command..	—	As with Hidescreen, there is no Linux equivalent.
SHUTDOWN	With the ACPI power-management driver loaded, force the server to shut down and power off.	shutdown -h	For more information, see the <a href="http://docs.hp.com/en/A5201-96043-en/apcs08.html">documentation on the Web (http://docs.hp.com/en/A5201-96043-en/apcs08.html)</a> .
SHUTDOWN NETWORK INTERFACE	Shut down a logical board without removing its resources.	ifdown	For more information, see the <code>ifdown</code> man page.
SLP ...	Manage and monitor SLP.	slptool ...	For example, <code>slptool findsrvs smb</code> .  For more information, enter <code>slptool -help</code> at the command prompt.
SMDR ...	Manage the Storage Management Data Requester, a Storage Management Services™ (SMS) component.	smdrd ...	For more information, see the <code>smdrd</code> man page.
SPEED	Display the speed at which the processor is running.	cat /proc/cpuinfo	For more information, see the <code>cat</code> man page.
SPFCON, SPXCONFIG, SPXS		—	SPX™ is a legacy protocol for NetWare only, including NetWare running in a virtual machine on an OES-Linux host server.
SPOOL	Create, change or display spooler mappings.  <b>IMPORTANT:</b> This applies to NetWare legacy printing and is no longer supported.	—	Legacy NetWare printing has been replaced by iPrint on both OES platforms.
START PROCESSORS	Start one or more secondary processors when the server is running on a multiprocessor computer.	—	Control of individual processors is not available as part of OES-Linux.
STOP PROCESSORS	Stop one or more secondary processors in a multiprocessor computer.	—	Control of individual processors is not available as part of OES-Linux.
SWAP	Display information about swap files, add or delete swap files, and specify the parameters of swap files.	mkswap swapon swapoff	For more information, see the respective man pages.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
_TCP	Monitor TCP/IP activity and connection status.	tcpdump	For more information, see the <code>tcpdump</code> man page.  To watch failovers and errors on bonded interfaces, use <code>tail -f /var/log/messages</code> .
TCPCON	Monitor TCP/IP activity, configuration and statistics information, known routes, trap log.  Use SNMP to access TCP/IP information in any remote protocol stack supporting the TCP/IP Management Information Base (MIB).	netstat	For more information, see the <code>netstat</code> man page.
TECHWALK	Record NetWare configuration information.	—	Techwalk is not available for OES-Linux. However, there is a GPL utility named <code>supportconfig</code> that collects system troubleshooting information. For more information, visit the <a href="http://www.novell.com/cool solutions/tools/16106.html">Cool Solutions Web site</a> ( <a href="http://www.novell.com/cool solutions/tools/16106.html">http://www.novell.com/cool solutions/tools/16106.html</a> ).
TIME	Display date and time, daylight saving time status, and time synchronization information	date	For more information, see the <code>date</code> man page.
TIMESYNC		—	Timesync is a NetWare time protocol that is compatible with and being replaced by NTP on NetWare. NTP is also the time protocol for Linux.
TLI	Provide Transport Level Interface (TLI) communication services.	—	This command is not ported to OES-Linux.
TNAMESESV	Start the Java IDL name server.	tnameserv	For more information, see the <code>tnameserv</code> man page.
TPING	Send an ICMP echo request packet to an IP node on your internetwork.	ping	For more information, see the <code>ping</code> man page.
TRACK OFF	Prevent the server from displaying the RIP tracking screen.	—	RIP tracking is a NetWare concept that is not relevant to OES-Linux.
TRACK ON	View the RIP tracking screen and make it the active screen.	—	RIP tracking is a NetWare concept that is not relevant to OES-Linux.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
TSAFS ...	Manage the SMS Target Service Agent for the file system.	tsafs	For more information, see the <code>tsafs</code> man page.
UNBIND	Remove a communication protocol from the LAN driver of a network board; disable communication on a specific board	ifdown	For more information, see the <code>ifdown</code> man page.
UNLOAD	Unload a module that was previously loaded with the LOAD command	—	<p>For OES services, use the service's stop script: <code>/etc/init.d/service stop</code>.</p> <p>Most OES services have <code>start</code>, <code>stop</code>, and <code>restart</code> options. For example, to stop eDirectory, enter <code>/etc/init.d/ndsd stop</code> at the command prompt.</p>
UPS_AIO	Provide the software link between your server and the UPS.	—	Support is hardware-specific. See <code>man apcupsd</code> in the <code>apcupsd</code> package.
VERIFY	Validate all blocks in an NSS pool.	ravsui verify <i>poolname</i> ravview	<p>The <code>ravsui</code> and <code>ravview</code> utilities are installed as part of Novell Storage Services NSS.</p> <p>Use the <code>ravsui</code> utility to find out whether you need to rebuild a pool to correct NSS volume problems.</p> <p>Use <code>ravview</code> to view the output.</p> <p>For help, enter one of the commands with the <code>-h</code> option.</p>
VERSION	View the file server version, license information, and copyright notice from the System prompt.	uname -a ncpcon version ndsstat	<p>For more information on the <code>uname</code> command, see the <code>uname</code> man page.</p> <p>For more information about <code>ncpcon</code>, see “<b>NCPCON</b>” in the <i>OES 2 SP2: NCP Server for Linux Administration Guide</i>.</p> <p>For help with <code>ndsstat</code>, enter the command with the <code>-h</code> option.</p>
VIEW	View a file from the NetWare server console.	less <i>filename</i> cat <i>filename</i>	<p>These commands are basically equivalent, but <code>less</code> allows for better scrolling and paging.</p> <p>For more information, see the <code>less</code> and <code>cat</code> man pages.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
VMDISMOUNT	Make a volume unavailable to users so it can be repaired.	—	<p>The <code>umount</code> command makes a traditional Linux volume unavailable so it can be repaired.</p> <p>Equivalent functionality for NSS volumes is available in the <code>nssmu</code> utility, which is installed with the Novell Storage Services RPMs and is documented in “<a href="#">NSS Management Utility (NSSMU) Quick Reference</a>” in the <i>NW 6.5 SP8: NSS File System Administration Guide</i>.</p>
VMMOUNT	Make a volume available to users.	—	<p>The <code>mount</code> command makes local and remote Linux POSIX file systems available.</p> <p>Equivalent functionality for NSS volumes is available in the <code>nssmu</code> utility, which is installed with the Novell Storage Services RPMs and is documented in “<a href="#">NSS Management Utility (NSSMU) Quick Reference</a>” in the <i>NW 6.5 SP8: NSS File System Administration Guide</i>.</p>
VMVOLUMES	List mounted volumes, including number, status and name.	—	<p>The <code>mount</code> command displays a list of all available file systems, both local and remote.</p> <p>Equivalent functionality for NSS volumes is available in the <code>nssmu</code> utility, which is installed with the Novell Storage Services RPMs and is documented in “<a href="#">NSS Management Utility (NSSMU) Quick Reference</a>” in the <i>NW 6.5 SP8: NSS File System Administration Guide</i>.</p>
VOLUME	List mounted volumes or information about a specific volume.	—	<p>The <code>mount</code> command displays a list of all available file systems, both local and remote.</p> <p>Equivalent functionality for NSS volumes is available in the <code>nssmu</code> utility, which is installed with the Novell Storage Services RPMs and is documented in “<a href="#">NSS Management Utility (NSSMU) Quick Reference</a>” in the <i>NW 6.5 SP8: NSS File System Administration Guide</i>.</p>
VREPAIR	Correct volume problems on NetWare Traditional volumes; remove name space entries from directory entry tables.	<code>fsck</code>	<p>For more information, see the <code>fsck</code> man page.</p>

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
WHOIS	Display information about either the DNS name or the IP address, depending on which is entered.	whois	For more information, see the <i>whois</i> man page.
WS2_32	Manage Winsock 32.	—	Does not apply.
XIDEV	Manage mouse support for the X Windows* interface.	—	Mouse support on OES-Linux is managed in YaST > <i>Hardware</i> (via <i>sax2</i> ).
XLOG	Diagnose ISDN-related connection problems with Eicon* Technology ISDN adapters.	—	This command is not ported to OES-Linux.
XNFS SHARE	List all shared paths.	exportfs -v	When executed without any options, <i>exportfs</i> displays only the exported path and the host that it is allowed to access. With the -v option, it displays the export options. For more information, see the <i>exportfs</i> man page.
XNFS SHARE REFRESH	Refresh the share list from the exports file.	exportfs -r	For more information, see the <i>exportfs</i> man page.
XNFS SHARE /PATH EXPORT_OPTIONS	Share a path dynamically.	exportfs -o options host:/path	For more information, see the <i>exportfs</i> man page.
XNFS UNSHARE /PATH	Unshare a path.	exportfs -u host:/path	For more information, see the <i>exportfs</i> man page.
XNFS NFS STATS	Display NFS protocol statistics.	nfsstat -n	For more information, see the <i>nfsstat</i> man page.
XNFS MOUNT STATS	Display MOUNT protocol statistics.	—	Similar functionality is not available on OES-Linux.
XNFS LOCKD STATS	Display LOCK protocol statistics.	—	Similar functionality is not available on OES-Linux.
XNFS TRACE ON/OFF	Turn the NFS Trace screen on or off.	tcpdump	XNFS TRACE provides a minimal trace; <i>tcpdump</i> captures all packets. For more information, see the <i>tcpdump</i> man page.
XNFS LOGSCREEN ON/OFF	Turn the NFS Log screen on or off.	—	Log messages are captured in <i>/var/log/messages</i> file.
XNTPD	Synchronize time with servers that are NTPv3 compliant.	ntpd	For more information, see the <i>ntpd</i> man page.

NetWare Command	Purpose or Subcommand	Linux Command Counterpart	Alternatives and Notes
YPCAT, YPWHICH, YPSET, YPPASSWD, etc.	NIS related operations.	Equivalent commands are available with the same names.	For more information, see the respective man pages.



**Table 3-1** discusses problems that are common when NetWare® administrators first begin working with Linux systems:

## 3.1 Common Problems and Solutions

**Table 3-1** *Common Problems and Solutions*

Topic	Problem	Solution
Shell Scripts	<p>Scripts won't run after changes are made on a Windows machine.</p> <p>Because DOS uses different ASCII characters to indicate a line ending (CR,LF) than Linux/UNIX (LF only), shell script files that were created or modified on a Windows system do not run on Linux until they are converted to UNIX format.</p>	<p>The quickest solution is usually to enter the following command at a command prompt:</p> <pre>dos2unix filename</pre> <p>where <i>filename</i> is the name of the text file needing to be converted.</p> <p>Also, many text editors have an option to save files in UNIX format.</p>

## 3.2 NCF vs. Shell Script Files

NCF files provide scripting on NetWare only and are not used with OES-Linux.

Shell scripts provide equivalent functionality on Linux, and most Linux administrators use them extensively. To learn about shell scripting, we recommend that you search for resources on the Web and consider investing in one or more of the excellent industry publications that address the subject.

## 3.3 Encryption for Linux Traditional File Systems

If you are interested in encrypting Linux traditional partitions and files, see “[Encrypting Partitions and Files](http://www.novell.com/documentation/sles10/book_sle_reference/data/cha_cryptofs.html)” ([http://www.novell.com/documentation/sles10/book\\_sle\\_reference/data/cha\\_cryptofs.html](http://www.novell.com/documentation/sles10/book_sle_reference/data/cha_cryptofs.html)) in the *SUSE Linux Enterprise Server 10 SP3 Installation and Administration Guide* ([http://www.novell.com/documentation/sles10/book\\_sle\\_reference/data/book\\_sle\\_reference.html](http://www.novell.com/documentation/sles10/book_sle_reference/data/book_sle_reference.html)).

